

**IS THERE ANY EFFECT OF ACCOUNTING INFORMATION ON  
STOCK PRICES? EVIDENCE FROM TOP 20 FIRMS LISTED IN  
FBM KLCI**

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of the requirements for the degree  
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# **Adakah Infomasi Akaun Mempengaruhi Harga Saham? Bukti dari 20 buah Syarikat teratas Dipasarkan dalam FBM KLCI**

## **Abstrak**

Tujuan utama kajian ini adalah untuk memeriksa hubungan antara harga saham dan nilai ekuiti, keuntungan dan dividen secara empirik, dengan menggunakan rangka kerja Model Ohlson. Model Ohlson adalah pelanjutan daripada Model Pendapatan Residu. Kajian ini juga memeriksa sama ada kuasa penjelasan model akan bertambah dengan merangkumi pembolehubah dinamik infomasi linear selain daripada pembolehubah akaun yang tersebut di atas. Kita mendapati model pendapatan residu, umpamanya model Ohlson, membentuk rangka kerja yang berguna untuk menerokai hubungan empirik antara harga saham dan maklumat akaun. Keputusan juga mencadangkan model Ohlson mungkin boleh diperkuatkan dan patut diuji dengan menggunakan ukuran komposit, iaitu pulangan ekuiti dan dividen setiap ekuiti berbabding dengan ekuiti, pendapatan dan dividen sebagai ukuran asing.



## **Abstract**

The main purpose of this study is to empirically examine the relationship between share price and the net book value, earnings per share and dividends per share, based on the framework of Ohlson model, which is the extension of residual income model. The study also attempts to examine whether the inclusion of the linear information dynamics besides the accounting variables will increase the explanatory power of the model. The findings show that the residual income model, and the Ohlson model in particular, forms a useful framework for exploring empirical relationships between share prices and accounting information. The findings also suggest that the model should be further tested using the composite measures, that is return on equity and dividend per equity, rather than focus on equity, earnings and dividends, as separate measures, to confirm whether using ROE and dividend per equity as the explanatory variables could improve the model.

# **Chapter One**

## **Introduction**

### **1.1 Introduction**

The main purpose of trading in the stock market is to make a fortune from the stock market. In order to make fortune from the stock rather than loss a fortune into the stock market, it is important for the investor to make a good selection of stocks and invest in the listed companies which have good potential of price appreciation. Speculation activities always exist in the equity market. Hence, in order to make a good selection of firms to invest in, it is important for the investor to have a good understanding of firm evaluation, so that they make sound investments based on the value of the firm and avoid those firms where stock prices are boosted by irrational speculation. As stated by Kothari (2001), evaluation of companies is one of the principal demands in research about capital markets. Damodaran (1999) highlighted that the ability of evaluating assets with precision is at the heart of the theory of finances because many personal and business decisions can be made by the selection of alternatives that generate the maximum value. Fernandez (2001) stated that one of the purposes of evaluation is to serve as a parameter of comparison of the shares traded in stock exchange.

The most direct approach to value a stock price is to define the net present value of the dividend that the stock holder is going to receive during the holding period of the

stock, plus the stock price when he sells the stock. However, when the stock is sold, the relevant price will be determined by discounting the cash flow that the subsequent holder expects to receive during the period he is holding the stock. As such, stock prices should be calculated by discounting the stream of all future dividends. This model of firm evaluation is commonly known as dividend discounting model. However, some authors hold the opinion that dividends are not a direct measure of business performance because they reflect decisions on the distribution of wealth rather than operating decisions that affect wealth creation. A profit making company may decide to retain the earnings rather than distribute dividends to shareholders, in order to fund the wealth creation project for the future growth the company. This was supported by researches done by Scott (1985); and Shiller (1990), which revealed that tests of stock pricing using the dividend discounting model are found to be unsatisfactory. Besides, although the dividend discounting model is sound in theory, it is difficult to apply, since applying the model involves estimating the future stream of dividend and the discount rate for an infinite period. It is impossible for anybody to accurately estimate the future stream of dividend and also the discount rate for an infinite period.

Another popular stock price valuation model is the price / earning model (Phillips and Ritchie, 1983), which is primarily the inverse of a price yield model. Salvary (2007) claimed that this model essentially uses a rule of thumb approach of stock valuation without any theoretical basis. He stated that when comparing the price yield for 2 stocks, both stocks must have similar risk, in order to make the comparison meaningful. However, there is no inherent measure of risk implicit in the price / earning model and

thus, this model lacked a theoretical base needed for an intrinsic valuation. While this model has contributed to our knowledge, there is lot more work needed to address its shortcomings.

Residual income valuation model (RIV) is the model that is commonly used in stock price evaluation, based on the accounting information. Ohlson (2000) pointed out that residual income valuation has been propelled into prominence. The model is so important that it was covered in the syllabus for accounting courses, and were widely discussed in the standard text books on accounting and finance. Residual income model is the extension of the dividend discounting model. It transforms the dividend discounting model and expresses the economic value of the equity in terms of accounting book value and abnormal earning. Again, just like the dividend discounting model, despite being sound in theory, it is difficult to apply in practice as applying the model in firm evaluation involves estimating abnormal earning, in an infinite period of time. It is impossible for someone to accurately estimate the abnormal earning of a firm for infinite period of time.

Ohlson (1995) further refined the work of residual income model and proposed an evaluation model which expresses the stock price in terms of current equity value, current abnormal earning, current dividend paid, and the linear information dynamic that may affect the abnormal earning of the next period. Linear information dynamics are also known as non-accounting value relevant information or value relevant information. Ohlson's (1995) framework shows that current equity value, current abnormal earning have positive effects on stock price, whereas current dividend has negative effects on

stock price. As for linear information dynamics, the variable may have positive or negative effects on stock depending on the perception of investor on the information.

## **1.2 Problem Statement**

It is believed that the accounting information plays an important role in reflecting the stock price. Accordingly, this study aims to find out to what extent is the importance of accounting information in determining the price of stocks, in the context of firms listed in Financial Time & Stock Exchange Bursa Malaysia KL Composite Index (FBM KLCI).

Pirie and Smith (2008) have performed an empirical study based on the framework of Ohlson's (1995) model, using the data of firms listed in FBM KLCI (it was known as Kuala Lumpur Stock Exchange during that time), covering 10 years from 1987 to 1996. The key variables in their model includes equity value, earning per share and the realize earning of next period, as the proxy of linear information dynamics. They conclude that two-way fixed effect model has the most significant explanatory power for the sample data from Malaysia market. Their model explained 74.56% of the variation in share price.

The study conducted by Pirie and Smith (2008) covers the time period from 1987 to 1996, before the Asian financial crisis in 1997. The Malaysian securities market was seriously impacted by the Asian financial crisis. After the crisis, Malaysian securities exchange has implemented tighter controls on the listed firms to prevent the speculation activity and to ensure the listed firms are more versatile in facing the financial challenges. For example, the daily stock price variation is limited to 30% versus 50% before crisis.

Also, no short selling is allowed after the crisis. The tighter controls may cause some shift on the atmosphere of Malaysia security market. Investors and fund managers may have different perception on the accounting variables that affect their investing decisions. As such, there should be a study using more contemporary data to validate the Ohlson's (1995) model. The purpose of this study is to examine the applicability of the Ohlson Model for firms listed in FBM KLCI, using more recent data from 2003 to 2009, which are more contemporary and more relevant. The study also includes the realized dividend of next period in addition to the realized earnings of next period, as a proxy for linear information dynamics. Since dividend is the key parameter in Ohlson's framework, logically, the expected dividend for next period should play a part in the variation of share price. This is the rationale of why this variable is added into the study. This additional variable is to confirm whether it will increase the explanatory power of the variation of share price. In this study, the accounting information variables are net book value per share (NBV), earnings per share (EPS) and dividends per share (DPS). The variables for linear information dynamics are expected earnings per share (EEPS) and expected dividends per share (EDPS). This study also aims to work out a general formula, based on the Ohlson's model, for investors or fund managers to predict the variation in share price when they receive the latest financial report and latest earning and dividend forecast by the analysts. It is hoped that this general formula will serve as a guideline especially for the retail investors in making rational value investment decisions, so that they would not be trapped by irrational speculation. The findings should be of interest to other researchers and the study will be a contribution to existing literature.

### **1.3 Research Objectives**

The study seeks to investigate how accounting information is related to stock price for selected counters listed in FBM KLCI. More specifically, the study aims to:

- i. Extend the international literature in market-based accounting research by examining empirical evidence of Ohlson's (1995) model which link the share price to accounting information and the linear information dynamics.
- ii. Develop a general stock evaluation formula for firms listed in FBM KLCI, based on the framework of Ohlson's (1995) model, which can serve as a general guide for retail investors in making their value investment decisions.
- iii. To confirm whether firms with higher equity fit better for Ohlson's model as compared to firms with higher market value.

### **1.4 Research Questions**

The study is based on the framework of Ohlson model, and intends to address the following research questions:

- i. Does Net Book Value per share (NBV) have a significant and positive effect on the share price of firms listed in FBM KLCI?
- ii. Does earnings per share (EPS) have a significant and positive effect on the share price of firms listed in FBM KLCI?
- iii. Does Dividend per share (DPS) have a significant and negative effect on the share price of firms listed in FBM KLCI?

- iv. Does expected earnings per share (EEPS) for the next period, proxied by the realized earnings per share for the next period has significant effect on the share price of firms listed in FBM KLCI?
- v. Does expected dividends per share (EDPS) for the next period, proxy by the realized dividends per share for the next period has significant effect on the share price of firms listed in FBM KLCI?
- vi. Is there any significant difference between firms with top equity value as compared to firms with top market value in fitting the Ohlson's (1995) framework?

### **1.5 Significance of Study**

Numerous empirical studies have been completed using Ohlson's (1995) model based on the data from other countries, in particular data from the US stock exchange. However, only one or two were done using data from FBM KLCI. A study by Pirie and Smith (2008), using Malaysia stock exchange data from 1987 to 1996, revealed that the EPS and NBV are significant factors in the valuation process. As stated in the previous section, their study is quite outdated and may not be so applicable and relevant in the current market environment. In contrast, this study uses data from 2003 to 2009, and thus better reflects recent performance of FBM KLCI. The present study also includes the realized dividends per share for next period as the additional parameter as a proxy for linear information dynamics, which was not covered in the study by Pirie and Smith.



## **1.6 Major Variables of study**

The study uses panel data from twenty reputable firms listed in FBM KLCI. The twenty firms are segregated into two groups for this study. The first group consists of ten firms that have the highest equity value while the second group are ten firms with the highest market value. The equity value and the market value of the firms covered in the study was based on data published in Sin Chew Daily on 6 Mar 2010 and 13 March 2010 respectively, which are the most recent data when this study are began. The twenty firms selected are the reputable firms in FBM KLCI, from various sectors, include Plantations, Bankings, Power and Utilities, Construction, and Industry. These twenty companies in diversified sectors would be a good representation of the FBM KLCL. More importantly, these twenty firms are well managed and have very good fundamentals. The share prices of these firms are reflected by their actual financial performance, which is the main criterion of our study. In economics, equity value will not be meaningful for investors. It is economic value of the equity that actually counts. Based on this, we would want to study the perception of investors on firm's equity value and to verify whether there is any difference between firms with high equity value and high market value in fitting the framework described by Ohlson's (1995) model.

The main objective of this study is to find the empirical evidence of Ohlson model which links the share price to accounting information and the linear information dynamics. The dependent variable of the study is the average closing price for 5 consecutive transaction days after the quarterly financial reports were announced. It is assumed that 5 days is sufficient for investors and fund managers to review, digest and

react accordingly based on the information from the quarterly financial reports. Following Ohlson model, Net Book Value per share (NBV), Earnings per share (EPS) and Dividends per share (DPS) are identified as the independent variables in this study. Realized earning per share of next period (EEPS) and realized dividend per share for the next period (EDPS) are two other independent variables identified as the proxies of linear information dynamics, as specified by Ohlson (1995) model.

### **1.7 Organization of the Study**

This study consists of five chapters. Chapter 1 provides an overall view of the evaluation models, in particular the Ohlson model. This introductory chapter starts with the introduction and the evolvement of evaluation model emphasizing the use of accounting information. This is followed by the problem statement, research objectives and research questions. The significance of the study, the definition and summary of the dependent and independent variable are then covered. Chapter 2 discusses the research model and related literature by previous researchers, covering the dividend discounting model, residual income model and Ohlson model. Chapter 3 first discusses theoretical framework and hypotheses to be tested. This is followed by a description of the research methodology and the statistical analysis based on the panel data model. Chapter 4 covers the analysis of results and Chapter 5 presents the conclusion and discussions, implications of the findings and limitations of the study. This concluding chapter then ends with suggestions for future research.

## **Chapter 2**

### **Literature Review**

#### **2.1 Introduction**

As we have discussed in chapter 1, Ohlson's model was developed based on the residual income model using the clean surplus relationship. The clean surplus relation ensures that the change of book value will differ from earning per share minus dividends per share. This will be discussed in detail in section 2.2. The Residual income model was actually transformed from the dividend discounting model. Hence, in order to understand Ohlson's model, we will first discuss the dividend discounting model and residual income model respectively.

#### **2.2 Dividend Discounting Model**

When valuing a share price using the dividend discount model, the share price will be derived by the stream of dividend that the owner is going to receive during the holding period, discounted at the cost of capital, plus the proceeds that the owner is going to receive when the share was sold. However, the selling price of a share is determined by discounting the dividends that the new owner expects to receive in the subsequent holding periods. If the firm is expected to exist with an indefinite life, the current price of

the shares,  $P_0$  can be calculated by discounting the stream of all future dividends as shown by the following formula.

$$P_0 = \sum_{t=1}^{\infty} \frac{E_0[d_t]}{(1 + E_0[r_t])^t} \quad (2.1)$$

where  $E_0$  is the expected value of the dividend

$d_t$  is the dividend payment

$r_t$  is the opportunity cost of capital.

The above equation is a general version of the dividend discount model found in most of the corporate finance text books. Although the model is sound in theory, it is difficult to apply due to the difficulties in estimating the future stream of dividends payment and the discount rates for an infinite period of time. As such, the practical application has simplified the model by assuming the dividend growth is at a constant rate,  $g$  for the remaining life of the firm. To further simplify the model, the opportunity cost of capital is assumed to be constant as well. This simplified model is known as constant-growth dividend discounting model. This model was also called the Gordon model, since the model was developed by Gordon (1962). A necessary assumption for the Gordon model is that the constant expected growth rate,  $g$  is lower than the constant discount rate,  $r$ . Otherwise, the series of cash flow will not converge to a finite solution. The Gordon model is stated as follows:

$$P_0 = \frac{d_0(1+g)}{(r-g)} \quad (2.2)$$

which  $P_0$  = share price

$d_0$  = dividend paid

$r$  = risk free rate (opportunity cost of capital)

$g$  = constant growth rate of dividend and which

$g < r$

In reality, it is impossible for dividends to grow constantly, as well as risk-free rate to remain constant for an infinite period of time. In order to accommodate more realistic patterns than constant growth, Damodaran (1996) describes several alternative versions of the model that relax the constraint of constant perpetual growth by dividing the remaining life of the firm into various stages with different growth rates. Despite that, estimating the dividend stream remains problematic because dividends are largely discretionary. Furthermore, firms with high growth opportunity may not be paying any dividends as the earnings will be retained to fund the growth opportunity.

Why do firms pay dividend? Is there or should there be a corporate dividend policy? Over the years, there has been serious debate concerning the above questions. Basically, there are two schools of thoughts about dividends. Graham and Dodd (1934) who advocated the first school of thought, pointed out that dividend is important in determining the value of a firm. In their book, entitled *Investment Analysis*, Graham and

Dodd (1934) argued that the sole purpose for a corporation to exist is to pay dividend. They argued that if there are two identical firms with respect to all other criteria, but one pay less dividends than the other, the latter must sell for a higher Price/Earning multiple. This was supported by Gordon and Shapiro (1956), Gordon (1963), Solomon (1963) and Walter (1963), who proposed the concepts of so-called bird-in-the-hand dividend model which emphasizes that it is better to get the cash in hand rather than a promise of future capital gain. The bird-in-hand model rationalizes the wisdom propagated by Graham and Dodd (1934), which ultimately turned out to be the bible for the professional investor. Babin (2000) advocated that it is important for a firm to pay dividends and he argued that dividends do matter and that paying attention to them will improve the odds of getting capital gains.

Advocates of the second school of thought believe that dividends are strictly for old fogies and tax exempted entities, but smart investors should think only about capital gains. Serious doubt about the economic rationality of the bird-in-the-hand model was raised by Miller and Modigliani (1961) who come out with the irrelevance proposition. Miller and Modigliani (1961) stated that in a world without taxes and transaction costs, the value of a firm is unaffected by the expected pattern of dividend payments. Black (1976) advocated this thought and called the love of dividends by shareholders is the dividend puzzle. Black (1990) foretold the complete disappearance of dividends under a corporate and individual dividend tax, arguing that in the future, the executives will need to explain and justify why they are paying dividend. Penman (1992) raised the so call “dividend conundrum”, which reported that share prices depend on the expected dividend

stream, but the pattern of dividends on how it actually paid provides no useful information because it is largely discretionary. Moreover, dividends are not a direct measure of business performance because they reflect decisions on the distribution of wealth rather than operating decisions that affect wealth creation. Fama and French (2001) demonstrated that the proportion of dividend-paying firms declined by 65% during the period 1979 - 1998. However, this finding contradicts the finding of DeAngelo et al. (2004). The latter study which was based on aggregate dividends from 1978, revealed an increase in dividends from 1978 to 2000. Frankfurter and Wood (2002), after statistically analyzing close to 200 papers, concluded that none of the dividend theories are unequivocally verified. Baker and Wurgler (2004) define a catering affect which implies that investors' demand for dividends changes over time. Their conclusion pointed towards sentiment-driven demand for dividends, which is in line with the review of laymen press that says: "Dividends tend to disappear when the sentiment for growth stocks is high and tend to reappear following crashes in such stock as investors' demand favors the safe return, that is, the dividend paying stock". This recognized the temporal nature of the dividends policy of firms. Firms tend to have lower dividends payout ratio when the stock price is growing, when the stock crash, firm will increase the dividend payout ratio, in order to gain confidence from the investors and prevent the stock price further slide.

### 2.3 Residual Income Model

Preinreich (1938), Edwards and Bell (1961), Peasnell (1981;1982) and Stark (1997) have developed the stand that accounting income measures might be interpreted as objectively measurable proxies for the unobservable economic income. Specifically, they developed a model known as the Residual Income Model (RIV), which transforms the dividend discount model and expresses the economic value of the equity in terms of accounting book value and abnormal earnings. Modigliani and Miller (1958; 1961), viewed the dividend policy of the firm as irrelevant to its current performance. The dividend irrelevancy principle allows substituting current earnings for dividends in valuations and becomes a corner stone in the abnormal earnings models. Abnormal earnings ( $x^a$ ) are defined by the Abnormal Earnings Relation (AER) as the difference between accounting earnings and normal earnings. Normal earnings represent a firm's normal return on the capital invested at the beginning of the period, that is, the net book value of equity multiplied by the interest rate. In short, abnormal earnings are earnings in excess of normal return rate, which is denoted by the following formula:

$$x_t^a = x_t - ry_{t-1} \quad (2.3)$$

Where  $x_t^a$  denotes the abnormal earnings at time  $t$   
 $x_t$  denotes the accounting earnings at time  $t$   
 $r$  denotes the risk-free rate and  
 $y_{t-1}$  denotes the equity book value at time  $t-1$



Another necessary condition for the equivalence of dividends and accounting versions of the general model is the clean surplus relation. The Clean Surplus Relation (CSR) ensures that a change in the book value of equity,  $y$  is reported as either accounting income,  $x$  or dividend,  $d$  and it can be stated as follows:

$$y_t = y_{t-1} + x_t - d_t \quad (2.4)$$

Using the definition of abnormal earnings and the clean surplus relation, dividend can be expressed in terms of abnormal earnings and equity book value as denoted below:

$$d_t = x_t^a + (1+r)y_{t-1} - x_t \quad (2.5)$$

Substituting the above equation into the equation (2.1) of dividend discounting model discussed in section 2.1 and with the assumption that markets are efficient and the discount rate is constant over time, the current price of a share can be expressed in term of abnormal earnings and equity value, as below:

$$P_0 = \sum_{t=1}^{\infty} \frac{E_0[x_t^a + (1+r)y_{t-1} - y_t]}{(1+r)^t} \quad (2.6)$$

With the further assumption that  $E_0[y_t/(1+r)_t] \rightarrow 0$  as  $t \rightarrow \infty$ , the current share price can be further simplified to a function of current book value plus the net present

value of all future residual income or abnormal earnings. It is also known as Residual Income Model (RIV), as defined below:

$$P_0 = y_0 + \sum_{t=1}^{\infty} \frac{E_0[x_t^a]}{(1+r)^t} \quad (2.7)$$

## 2.4 Ohlson Model

The residual income model provides a sound theoretical link between share prices and the two summary accounting variables, namely equity and net present value of abnormal earnings. But it has similar concerns as the dividend discount model. It is difficult to apply as it involves the estimation of the abnormal earnings for an indefinite period of time, unless it is valid to simplify the model with the assumption of constant growing rate for abnormal earnings. This is very unlikely to happen as a firm with abnormal earnings will attract competitions while diluting the margin. In reality, abnormal earnings will be a temporary phenomenon, and earnings will deteriorate over time to a normal level.

Ohlson (1995) proposed a model that assumes both abnormal earnings and linear information dynamics which evolve according to autoregressive process, which is normally referred to as the linear information dynamics. It defines the stochastic process for abnormal earnings and linear information dynamics via the two equations below:

$$x_{t+1}^a = \omega x_t^a + \nu_t + \varepsilon_{1t+1} \quad (2.8)$$

$$\nu_{t+1} = \gamma \nu_t + \varepsilon_{2t+1} \quad (2.9)$$

Where  $\nu_t$  = linear information dynamics that is useful in predicting future abnormal earnings at time t

$\varepsilon_1$  and  $\varepsilon_2$  = random disturbance terms with constant variance and zero mean

$\omega$  and  $\gamma$  = constant persistence parameter with the value between 0 and 1, so that abnormal earnings will decline over time

The linear information dynamics is an additive shock to next period's abnormal earnings. This information can be completely unpredictable ( $\gamma = 0$ ) or partially predictable ( $\gamma = 1$ ), but it must flow through abnormal earnings in the next period. For example, if the firm gets a new contract at time t, then an additive shock will arrive in abnormal earnings in the next period of time, t + 1. Based on the residual income model and the linear information dynamics, Ohlson (1995) obtains the valuation function as be follows:

$$P_t = y_t + \alpha_1 x_t^a + \alpha_2 \nu_t \quad (2.10)$$

Where  $\alpha_1 = \frac{\omega}{(R_f - \omega)}$ ;

$$\alpha_2 = \frac{R_f}{(R_f - \omega)(R_f - \gamma)};$$

$R_f = 1$  plus the risk free rate, r

Substituting the definition of abnormal earnings and the clean surplus relation into the above formula, Ohlson obtains a further expression for the price of a firm in terms of book value, current earnings, current dividends and linear information dynamics, as stated in equation (2.11) as follows:

$$P_t = (1 - k)y_t + k(\varphi x_t - d_t) + \alpha_2 v_t \quad (2.11)$$

Where  $k = (R_f - 1) \alpha_1 = (R_f - 1) \omega / (R_f - \omega)$

$$\varphi = R_f / (R_f - 1)$$

Referring to equation (2.11), it is noted that the book value and current earnings should be positively related to the stock price, whereas dividends is having a negative effect on stock price. As for the linear information dynamics, this variable could have positive effect or negative effects on stock price, depending on whether the information will create positive value or negative value to the firm.

Feltham and Ohlson (1995) expand the Ohlson's model (1995) by separating a firm's net assets into financial and operating assets. The distinguishing feature is that Ohlson's model (1995) assumed that financial assets to be fairly valued on the balance sheet such that abnormal earnings for financial assets are always zero. In fact, one can simplify the Feltham and Ohlson's model (1995) by only focus on operating assets. With this simplification, there is no difference between Ohlson's model (1995) and Feltham and Ohlson's model (1995).

The popularity of Ohlson model for empirical research is that it provides a testable pricing equation that identifies the roles of accounting and non-accounting information. The linear dynamics incorporated in the Ohlson framework allows the price to be expressed in term of the summary of three accounting information and the linear information dynamics. It is also interesting to note that the model gives a negative sign on dividends, that is, the share price is negatively correlated to dividends. This seems to contradict the view of the conventional school of thought which highly emphasizes on the importance of dividends. This relationship will be tested in the study.

## **2.5 Empirical Studies on the Ohlson Model**

The work of Kormendi and Lipe (1987), and Campbell and Shiller (1988) have strongly suggested that the accounting earning variable represents fundamental value. These findings are reinforced by the findings of Guo and Chang (1993), who found that accounting-based returns were measures at the ordinal level which enabled ranking of firms by their securities returns and also the usefulness of such accounting information increased over twenty years that were covered by the study. Salvary (2007) pointed out that there have been many studies on stock evaluation using accounting information and most of the studies implicitly recognize the use of accounting information as a fundamental variable in stock price determination. Presumably accounting information underlies the fundamental valuation approach employed in the equity market.

Since Ohlson (1995) model was published, it attracted considerable attention among accounting researchers since its publication. In fact, it was met with enthusiasm which was unprecedented in the accounting and capital market research. Theorists have praised the elegance and simplicity of the valuation framework provided by the model. This was evidenced by some of the statements made by the researchers. Bernard (1995) stated that Ohlson (1995) and Feltham-Ohlson's (1995) studies stand among the most important developments in capital markets research in the last several years. He further opined that the models are seen as a major breakthrough and their studies stand among the most important development in capital markets research in the 1990's. The studies provide a foundation for redefining the appropriate objective of valuation research. Lundholm (1995), for example, wrote: "The Ohlson (1995) and Feltham and Ohlson (1995) papers are landmark works in financial accounting". He stated that Ohlson and Feltham had presented a very crisp yet descriptive representation of accounting and valuation process. Lo and Lys (1999) stated that the work of Ohlson (1995) and Feltham and Ohlson (1995) had a profound impact on accounting research and it provides a logically consistent framework about the valuation of accounting numbers. They found that there is an average of 9 annual citations in the Social Sciences Citation Index (SSCI), and if the citation rate continues, they commented that Ohlson's work is not only influential, but will become a classic, based on Brown's (1996) view that an article is characterized as classic if it has an average annual SSCI of 4 or more.

Bernard (1995) tested on the residual income valuation in order to examine the explanatory power of abnormal earnings on share price. He found that the abnormal

earnings explained 68% of the variation in share prices. Frankel and Lee (1998) found that Ohlson's value estimates, based on consensus earnings forecast, were highly correlated with contemporaneous stock prices. Dechow, Hutton and Sloan (1998) has rigorously evaluated Ohlson model empirically, by developing a number of regressions using the Ohlson's model (1995) with alternative values of the persistence parameters using data collected from New York Stock Exchange. Their study found that the models based on Ohlson framework have a reasonable fit for the empirical data, with explanatory power in the range of 40% to 60%. However, their summary suggested that the theory adds little empirically beyond the simple proposition that market value can be approximated by capitalized next-period expected earnings. Liu and Ohlson (1999) made the same conclusions in their work on developing the empirical implication of Feltham and Ohlson model, which relates a firm's market value to accounting data and their expected realization. They also noted the reason that Ohlson model adds little empirically beyond the simple model propositioned, could be due to Ohlson's (1995) model has excluded the conservative accounting. More specifically, Ohlson's (1995) ruled out growth as a relevant variable. The absence of this variable will probably be too restrictive to make the theory empirically useful beyond the approximation that share value equals capitalized expected earnings. Another reason, according to Liu and Ohlson (1999), is that investors overweight information in the estimation of earnings and underweight information in the current accounting variables.

In contrast to the above studies, there are other studies with mixed results; some researches even refute some of the assumptions and conclusions of the abnormal earnings

models. Lo and Lys (1999) reviewed numerous empirical studies and commented that most of the studies apply a residual income model without the information dynamic which is the key feature of Ohlson's framework. They conclude that there is limited evidence of validity of the Ohlson's framework and more work needed to be done especially in proving the validity of linear information dynamics. Their further research on Ohlson Model (Lo and Lys, 2000) concluded that residual income model, which is a simplified version of Ohlson model, has higher explanatory power in the variation of stock prices relative to dividend discount model. However, they opined that this was likely due to book value and earnings forecasts being more closely associated with scale (total equity value) than dividends. They further concluded that there are many opportunities to refine the theoretical framework and to test its empirical validity. They also stated that the praise many empiricists have given to Ohlson's model is premature. Myers (1999) refuted the linear information dynamics which is the major contribution of Ohlson. He found that the accounting conservatism parameter of book value failed to accurately characterize the time series of residual income and the time-series properties of accounting information were likely to be non-stationary due to changes in growth rates and production technologies. These findings were contrary to the assumptions of Ohlson which rule out growth as a relevant variable. Burgstahler and Dichev (1997) refuted the linear valuation function of Ohlson. They found that the impact of either earnings or book values depends on the level of these two variables and concluded that the valuation function is convex, not linear. Bar-Yosef, Callen and Livnat (1996) investigated the



information dynamics of the Ohlson (1995) model and rejected the one-period lagged linear dynamic for a large sample of firms during the period 1960 to 1987.

Due to mixed evidence from the previous research, this paper seeks to test the Ohlson model by using data for the stocks listed in FBM KLCI. This is to verify whether this model is applicable in the context of the Malaysian equity market.

## **2.6 Summary of the Chapter**

Chapter 2 first discussed the Ohlson model and its two preceding models from which it was based on, that is, the residual income and dividend discounting models respectively. This discussion was followed by a literature review on the empirical studies based on Ohlson's (1995) framework. The empirical results revealed that there were mixed evidence to support Ohlson model.